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声触诊组织量化技术评估慢性肾病的影响因素及其应用价值

Impact factors and application value of virtual touch tissue quantification technology in evaluation on chronic kidney disease

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中文摘要:

目的 研究声触诊组织量化 (VTQ) 技术评估慢性肾病的影响因素, 评价其应用价值。方法 应用VTQ技术测量192例慢性肾病患者 (病例组) 及112名正常对照的肾皮质硬度, 于右肾下极设置ROI, 将检查深度设定为2.0~6.5 cm, 并分为2.0~3.5 cm (深度1)、3.6~5.0 cm (深度2)、5.1~6.5 cm (深度3), 分析不同深度下各期肾病患者与正常对照组的剪切波速度 (SWV) 差异。评价患者的血肌酐与肾皮质SWV的相关性, 分析不同病理类型间SWV差异。结果 深度1~3下, 正常肾皮质的SWV中位数分别为2.91、2.82、2.48 m/s, 深度1、深度2与深度3的SWV差异有统计学意义。深度2下, 正常对照组与中晚期肾病患者SWV差异有统计学意义, 且随病变程度加重, 肾皮质SWV中位数逐渐减小。肾病患者肾皮质SWV值与血肌酐水平呈负相关。不同病理类型肾病患者间SWV差异无统计学意义。结论 VTQ技术可用于评估慢性肾病的病变程度, 定量评价肾脏顺应性。

英文摘要:

Objective To explore the impact factors and the application value of virtual touch tissue quantification (VTQ) in evaluating chronic kidney disease (CKD). **Methods** Totally 192 patients with chronic kidney disease and 112 volunteers with normal renal function were enrolled. The depth of ROI was set from 2.0 cm to 6.5 cm, and ROIs were divided into three groups according to their depths, i.e. 2.0-3.5 cm (depth 1), 3.6-5.0 cm (depth 2) and 5.1-6.5 cm (depth 3). Shear wave velocities (SWV) were measured at the lower pole of right kidney, and the differences of SWV among different CKD stages were analyzed. The correlation between serum creatinine (SCr) and SWV of CKD patients was analyzed. The differences of SWV in different pathologic patterns were also compared. **Results** The median of SWV of normal renal cortex in three different depths was 2.91, 2.82 and 2.48 m/s, respectively. There was statistical difference of SWV not only between depth 1 and 3 but also between depth 2 and 3. There were significant statistical differences of SWV between normal group and middle to advanced stages in depth 2, and the median of SWV decreased with the exacerbation of CKD. Negative correlation was found between SCr and SWV of renal cortex in CKD patients. There was no statistical difference of SWV among pathologic patterns of CKD. **Conclusion** VTQ technology can be used to evaluate the degree of CKD and quantitatively assess the compliance of renal tissue.

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